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Training of engineers in mathematics at university on the basis of the information cybernetic approach

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Abstract

© 2017 Authors. The relevance of the presented research is conditioned by the necessity of continuous formation of a competitive personality. The competitiveness of the state in the world market is caused by the level of transport and energy infrastructure, the level of training and qualification of the country's engineers. These have determined the task currently being decided by educational organizations to find new resources for training of highly qualified specialists for the diverse industries to develop. Analyzing the multicomponent training of future engineers, experts note the pedagogical potential of mathematical disciplines in the formation of professional competence of engineers. The potential of the cyber-information approach in the training of engineers at university is disclosed and justified in the article, the potential is represented by a combination of the following resources: motivational-adaptive, subjective, integrative, managerial. The authors developed the author's method of training of future engineers in mathematics at university on the basis of the information-cybernetic approach, represented by successively implemented modules: "I get to know myself." "Intellectual puzzle", "Entertaining modeling", "Creative laboratory". The effectiveness of the developed methodology was proved in the course of the experimental research carried out from 2012 to the present time and the experimental training in mathematics at university using the didactic potential of the information cybernetic approach. The materials of the article can be useful in practical terms for university teachers of mathematics striving to significantly improve the level of mathematical training of future engineers.

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Keywords

Information-cybernetic approach, Subject-subject interaction, Training of students in mathematics at university

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